SPIRIDONOV, V.

A formula of the S.N.Bershteyn quadratures. Doklady BAN 17 no.4:339-342 '64.

1. Predstavleno chl.-korr. L.Iliyevym [Iliev, L.].

DIMITROV, Emanuil; SENDOV, Blagovest; SPIRIDONOV, V.

Axiomatics and automatic check of block diagrams. Godishnik fiz mat 56 no.1:185-190 '61/'62 [publ. '63].

L 18091-66 EWT(d)/T/EWP(1) LJP(c)
ACC NR: AP6010170 SOURCE CODE: BU/0011/65/018/008/0723/0724

35
B

AUTHOR: Spiridonov, V.; Germanov, M.

ORG: Institute of Mathematics, Bulgarian Academy of Sciences

TITLE: Class of convex functions of nonlinear programing 16,74,55

SOURCE: Bulgarska akademiya na naukite. Doklady, v. 18, no. 8, 1965, 723-724

TOPIC TAGS: function, linear programming

ABSTRACT: The authors discuss the minimum of the function

$$f(X)=f(x_1, x_2, \ldots, x_n) \qquad (1)$$

which exists within the bounded, convex, and closed polyhedral region R defined by the system of inequalities

$$\sum_{j=1}^{n} a_{ij}x_j \geq b_i \qquad (i=1, 2, \ldots, m;\ m>n), \qquad (2)$$

provided f has continuous and bounded second partial derivatives over all the variables x_j ($j = 1, 2, \ldots, n$) in R and is a rigorously convex function in R. The basic among the 7 theorems stated indicates that the minimum of the function can be found following the simplex procedure. This does not mean that one finds a new simplex procedure (as believed by some authors, see P. Wolfe, Econometrica, 27, 1959, 382; J. Kelley, J. Soc. Ind. Appl. Math., 8, 1960,

2

Card 1/2

KOZLOV, Dmitriy Nikitin, kandidat tekhnicheskikh nauk, dotsent; SPIRIDONOV, V.A., redaktor; ALEKSANDROV, L.A., redaktor; VOLKOVA, Ye., tekhnicheskiy redaktor

[Repair of equipment in ship repairing enterprises] Remont oborudovaniia sudoremontnykh predpriiatii. Moskva, Izd-vo "Morskoi transport," 1955. 462 p. (MIRA 9:4)
(Shipyards)

OSIPOVICH, Filipp Abramovich; SPIRIDONOV, V.A., redaktor; VITASHKINA, S.A., redaktor izdatel'stva; TSVETKOVA, S.V., tekhnicheskiy redaktor

[Manual for the ship repair shop turner] Posobie tokariu sudoremontnogo zavoda. Izd. 3-e, perer. i dop. Moskva, Izd-vo "Rechnoi transport," 1957. 243 p. (MLRA 10:7)
(Lathes) (Ships--Maintenance and repair)

SLOBODYANYUK, L.I., kand.tekhn.nauk; SPIRIDONOV, V.A., kand.tekhn.nauk

Closed loop steam-turbine compressor installation. Teploenergetika 8 no.4:25-27 Ap '61. (MIRA 14:8)

1. Alchevskiy gornometallurgicheskiy institut.
(Steam turbines)

SPIRIDONOV, V.A., kand.tekhn.nauk; SLOBODYANYUK, L.I., kand.tekhn. nauk

Waste regenerator systems with heat pumps for metallurgical plants. Stal' 21 no. 1:87-91 Ja '61. (MIRA 14:1)

1. Voroshilovskiy gorno-metallurgicheskiy institut.
(Metallurgical plants--Equipment and supplies)
(Heat regenerators)

PA 40/49T92

SPIRIDONOV, V. A.

USSR/Mining Equipment Jan 49
Signaling Devices

"A Signal System for the Main Dip of a Mine," V. A. Spiridonov, Engr, "KhakassUgol" Trust, 1½ pp

"Ugol'" No 1

Basic requirement of subject signaling system is that it will permit operators of the control section to know which part of the main dip is being used. Includes schematic diagram of recommended signaling system.

40/49T92

PA 40/49T91

SPIRIDONOV, V. A.

USSR/Mining Equipment
Machines, Blasting

Jan 49

"A Device for Testing Explosive Tools," V. A. Spiridonov, Engr, "KhakassUgol" Trust, 1 p

"Ugol'" No 1

Describes equipment developed by Measurement Lab, TsMM of KhakassUgol' Trust, which can be used to check blasting plunger boxes before they are put into use. Two sketches show basic details of apparatus.

40/49T91

PA 196T53

SPIRIDONOV, V. A.

USSR/Electricity - Power, Industrial Sep 51
Coal Mines

"Some Regularities in the Electric Power Consumption of Coal Mines," V. A. Spiridonov, Engr, "Vostsibugol'" (East Siberian Coal) Combine

"Elektrichestvo" No 9, pp 68-74

Gives methodology and results of a study made by the author of the elec power consumption of coal mines in East Siberian basins. Proposes approx relationships, checked in practice, which permit one to det the sp elec power expenditures and permissible elec loads of operational and planned mines. Submitted 21 Mar 51.

196T53

SPIRIDONOV, V. A.

USSR/Electricity - Mine Transport Apr 53

"Approximate relationships encountered in Electric Mine Transport Power Supply," Engr V. A. Spiridonov, Vostsibugol' Combine

Elektrichestvo, No 4, pp 75-79

After describing procedure and results of study of elec transport power consumption relationships at mines of East Siberian coal basins, author arrives at number of approx relationships detg amt of elec power required by transport under different operating conditions. Introduces concept of transport operating factor, and shows procedure for detg it. Submitted 13 Jun 52.

B T31

GORELIK, S.S.; ROZENFEL'D, A.M.; SKAKOV, Yu.A.; SPIRIDONOV, V.B.

Investigating the nichrome recrystallization process following small deformations with use of the EEM-75 emission microscope. Izv. vys. ucheb. zav.; chern. met. no.1:159-166 '60. (MIRA 13:1)

1.Moskovskiy institut stali i nauchno-issledovatel'skiy institut, pochtovyy yashchik No.4064.
(Nichrome--Metallography)

GORELIK, S.S.; ROZENFEL'D, A.M.; SKAKOV, Yu.A.; SPIRIDONOV, V.B.

Mechanism of the formation and disappearance of twins during the heating of deformed nickel-chromium alloys. Izv. vys. ucheb. zav.; chern. met. no.2:105-111 '60. (MIRA 15:5)

1. Moskovskiy institut stali.
(Nickel-chromium alloys--Metallography)
(Crystal lattices)

POLYANSKIY, V.M.; SPIRIDONOV, V.B.

Electron microscopy of the structure of the SAP material. Metalloved. i term. obr. met. no.12:37-39 D'63. (MIRA 17:2)

SPIRIDONOV, V.B.; SKAKOV, Yu.A.; IORDANSKIY, V.N.

Use of the method of thin metallic foils for studying the morphology of martensite. Zav.lab. 29 no.8:955-956 '63. (MIRA 16:9)
(Martensite—Metallography) (Metal foils)

L 18128-63 EWT(d)/EWP(k)/EWP(q)/EWT(m)/BDS AFFTC/ASD Pf-4 JD/HW
ACCESSION NR: AP3004572 S/0032/63/029/008/0972/0973

63

AUTHOR: Spiridonov, V. B. 14

TITLE: Production of thin films from aluminum and its alloys suitable for examination in an electron microscope 16 27

SOURCE: Zavodskaya laboratoriya, v. 29, no. 8, 1963, 972-973

TOPIC TAGS: aluminum foil, thin film , NaOH, HNO_3

ABSTRACT: These films of superior quality were obtained by means of chemical thinning. The issuing material consisted of aluminum foil or aluminum alloy foil, of 0.10-0.12-mm thickness. The dissolving took place in a 40% aqueous NaOH solution at 40-60C. The higher the temperature the more rapid and uniform the dissolving, and under the stated conditions it took 3-6 minutes to arrive at a thickness of 100-1000 A. The foil is removed from the solution when it rises to the surface and is dotted with a number of minute holes. After rinsing in both warm and cold running water, the foil is transferred for 2-3 minutes to a 30% solution of HNO_3 to remove the black deposit formed in alkali. After another rinse in running water the film is ready for inspection under a translucent

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ACCESSION NR: AP3004572

electron microscope. It is claimed that practically any section of the sample is suitable for such study, the size of the thin zones reaching several tens and sometimes even hundreds of microns. Since the area of the foil remains practically the same, it implies that a 30 x 40 mm sample could yield up to several tens of suitable samples. The foil is placed between two sheets of ethanol-washed cellophane and cut with a razor blade. These films do not require additional treatment by a phosphorochrome electrolyte.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 26Aug63 ENCL: 00

SUB CODE: CH NO REF SOV: 001 OTHER: 001

Card 2/2

IORDANSKIY, V. N.; SKAKOV, Yu. A.; SPIRIDONOV, V. B.

"Structural changes during aging of martensite in chromium-nickel steel."

report submitted for 3rd European Regional Conf, Electron Microscopy, Prague, 26 Aug-3 Sep 64.

L 22544-65 EWT(m)/EWA(d)/T/EWP(t)/EWP(k)/EWP(b) Pf-4 MJW/JD/HW

ACCESSION NR: AP5002352 S/0126/64/018/006/0929/0930

AUTHOR: Spiridonov, V. B.; Skakov, Yu. A.; Iordanskiy, V. N.

TITLE: Morphology of martensite in Kh17N4M2D steel

SOURCE: Fizika metallov i metallovedeniye, v. 18, no. 6, 1964, 929-930

TOPIC TAGS: Kh17N4M2D steel, martensite formation, steel deformation, martensite morphology

ABSTRACT: The morphology of martensite obtained by 10-15% deformation of steel at room temperature was investigated. The martensite consisted of 1-2 micron long needles with no internal twinning; the density of dislocations was above 10^{11} cm^{-2}. The hexagonal ε-phase was not present. The strength of the martensite formed by deformation was similar to that of martensite obtained by cooling after tempering. Martensite by the latter method could not be really compared with martensite obtained at low temperatures due to the diffferences in carbon content. But comparison of the martensites formed by cold working and by deform-

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L 22544-65
ACCESSION NR: AP5002352

ation led to the conclusion that the morphology of martensite is determined primarily by the temperature of its formation. Orig. art. has: 1 figure and 1 table

ASSOCIATION: None

SUBMITTED: 10Dec63 ENCL: 00 SUB CODE: MM

NR REF SOV: 002 OTHER: 002

Card 2/2

L 15025-65 EWT(m)/EWA(d)/EWP(t)/EWP(b) ASD(m)-3/AFETR JD
ACCESSION NR: AP4049106 S/0129/64/000/011/0019/0024

AUTHOR: Spiridonov, V. B.; Skakov, Yu. A.; Iordanskiy, V. N.

TITLE: Changes with aging in the properties of martensite of chromium-nickel steels

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 11, 1964, 19-24

TOPIC TAGS: chromium nickel steel, cold treatment, straining, heat treatment, martensite, aging

ABSTRACT: The dependence of the aging effect on the structure of martensite, i.e., on the method of obtaining martensite, in stainless, austenitic-ferritic, Cr-Ni steels has been investigated. In four semiaustenitic stainless steels containing 0.07—0.09% C, 15.03—16.65% Cr, and 4.29—9.53% Ni alloyed with Al, Mo, Mo and Cu, or Mo and Al, martensite was formed by subzero treatment at -70C for 2 hr, by cold rolling with a 15—17% reduction, or by cooling after tempering for 1.5 hr at 750C. Changes in the mechanical properties and electrical resistivity were studied in the steels aged for up to 3 hr at temperatures ranging from 400 to 550C. Rapid and slow stages in the changes caused by aging in the properties of Cr-Ni steels with a martensitic structure were observed. The two stages were particularly noticeable in steels alloyed with Cu or Al. In steels alloyed with Mo, the main change in

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L 15025-65
ACCESSION NR: AP4049106

properties occured in the first minutes of aging. In both stages, aging is determined by diffusion. In the first stage of aging, the diffusion consists mainly in a "drift" of dissolved atoms toward dislocations under the action of the stress field, while in the second stage, a normal diffusion caused by chemical gradients takes place. The strengthening with aging probably occurs in the initial stage of martensite decomposition when the dislocations are pinned. The nature and concentration of the structure defects affect the kinetics of strengthening and weakening with aging. The structure defects of martensite formed by cold treatment are more stable than the defects of martensite formed by straining or heat treatment. As a result, cold-treated steels get higher mechanical properties with aging, and are less susceptible to weakening with overaging than the steels with a martensitic structure formed by straining or heat treatment. Orig. art. has: 3 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 007 OTHER: 001 ATD PRESS: 3143

Card 2/2

L 19478-65 EWT(m)/EPA(d)/T/EWP(t)/EWP(b) ASD(m)-3 MJW/JD

ACCESSION NR: AP4047511 S/0129/64/000/010/0049/0051

AUTHOR: Spiridonov, V. B.; Skakov, Yu. A.; Iordanskiy, V. N.

TITLE: Microstructure of martensite in chromium-nickel steel

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 10, 1964, 49-51

TOPIC TAGS: chromium nickel steel, Kh17N4M2D steel, austenitic martensitic steel, precipitation hardenable steel, steel martensite, martensite structure, martensite strength

ABSTRACT: The structure of martensite in Kh17N4M2D precipitation-hardenable steel (0.09%C, 16.65% Cr, 4.29% Ni, 2.25% Mo, 1.24% Cu) has been studied with a transmission electron microscope. It was found that the structure of martensite depends upon the conditions of formation. Subzero treatment at -70C for 2 hr transformed 80—85% of the austenite into martensite consisting of a mixture of needles and lamellos with twin crystals 100—2000 Å wide. In wider twins, some dislocations were observed. Needles contained no twins, but a considerable number of dislocations. High tempering at 750C for 1.5 hr and

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L 19478-65
ACCESSION NR: AP4047511

Subsequent cooling to room temperature transformed practically all the austenite into acicular martensite without twins but with a significant number of dislocations. The tensile and yield strengths of martensite obtained by subzero treatment were 140—150 kg/mm^2 and 100 kg/mm^2. Those of martensite obtained by tempering were lower: 105—110 kg/mm^2 and 80 kg/mm^2. Individual crystals of martensite observed in residual austenite containing stacking faults confirmed the assumption about the nucleation action of stacking faults which otherwise appear to limit the growth of martensite crystals. Orig. art. has: 3 figures.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute of Steel and Alloys)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 002 OTHER: 003 ATD PRESS: 3159

Card 2/2

L 17074-65 EWT(m)/EWA(d)/EWP(t)/EWP(b) ASD(m)-3/AFETR MJW/JD/JW

ACCESSION NR: AP4049919 S/0020/64/159/003/0544/0547

AUTHOR: Spiridonov, V. B.; Skakov, Yu. A.; Iordanskiy, V. N.

TITLE: Changes in the structure and properties with aging of martensite in chromium nickel steels B

SOURCE: AN SSSR. Doklady*, v. 159, no. 3, 1964, 544-547

TOPIC TAGS: chromium nickel steel, maraging steel, martensite, subzero treatment, straining, heat treatment, aging, property, structure

ABSTRACT: The kinetics of aging and the effect of aging on the fine structure of martensite have been investigated in three precipitation-hardenable steels: Kh15N9Yo (15.03% Cr, 8.53% Ni, 1.40% Al); Kh16N5M3 (16.20% Cr, 4.78% Ni; 3.30% Mo); and Kh17N4M2D (16.65% Cr, 4.29% Ni; 2.25% Mo, 1.35% Cu). The martensite was formed by the subzero treatment (at -70C for 2 hr), by cold working, or by annealing at 750C for 1.5 hr followed by cooling. The aging-induced change in the properties of steels of this type occurred rapidly in the initial stage and at a rate about two orders slower in the second stage. In a steel alloyed with Mo, the difference in the rate of change was still higher. The activation energy of aging, which ranged from 40 to 57 kcal/g·at, depending on the steel composition and preliminary

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ACCESSION NR: AP4049919

treatment, remained constant during the entire aging process. This showed that aging is controlled by diffusion in both stages: by a "drift" of the solute atoms toward dislocations during the first stage; and by the diffusion resulting from chemical gradients in the second stage. The kinetics of aging and structural changes occurring in martensite during aging are very similar in steels alloyed with different elements. The differences in the nature of alloying elements promoting the aging and in the final structure of precitated secondary phase appear during later stages of aging. The main changes in the martensite properties appear to occur in the initial stage of aging and to be associated with the formation of segregations and coherent formations. Hence, aging of martensite is a particular case of aging when the matrix has a very high dislocation density, and strengthening takes place during the decomposition stage which precedes the formation of particles of the stable phase and which is different in different steels. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 10Jul64 ENCL: 00 SUB CODE: MM, IE

NO REF SOV: 008 OTHER: 004 ATD PRESS: 3149

Card 2/2

[redacted], V.S.; [redacted], Yu.F.; [redacted], V.I.

Structure of martensite in Kh17N4M2B steel. Fiz. met. i metalloved. 18 no.6:929-930 D '64. (MIRA 18:3)

SPIRIDONOV, V.B.; SKAKOV, Yu.A.; IORDANSKIY, V.N.

Change in properties during martensite aging in chromium-nickel steel. Metalloved. i term. obr. met. no.11:19-24 N '64. (MIRA 18:4)

L 45380-65 EWI(m)/EWP(w)/EWA(d)/EPR/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) Pf-4/Ps-4
IJP(c) MJW/JD/HW

ACCESSION NR: AP5007008 S/0129/65/000/003/0047/0049

AUTHOR: Spiridonov, V. B.; Skakov, Yu. A.; Iordanskiy, V. N. 38 35 B

TITLE: Electron microscopic study of Kh21N5T steel

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 3, 1965, 47-49

TOPIC TAGS: brittleness, steel hardening, metal mechanical property, heat treatment, metal foil

ABSTRACT: The authors report the results of an electron microscopic study of Kh21N5T steel foil subjected to heat treatment used for massive samples. Mechanical tests of laboratory samples in the hardened state (quenched from 1050°C, 30-min aging, cooling in water) and after additional heating indicate that the steel has a tendency toward embrittlement in the presence of titanium (in excess of amounts necessary for fixing carbon) and aluminum. The embrittlement after tempering at about 500°C is due to separation processes. The tendency toward separation at dislocation-type defects is particularly noticeable at higher aging temperatures (600°C for 8 hr, cooling in air). Diffraction patterns of the same character were

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L 45390-65

ACCESSION NR: AP5007008 3

obtained at 550 and 600°C; this shows that heating to 600-650°C causes solidification of the segregations and an accompanying increase in impact strength. To prevent the embrittlement of Kh21N5T steel, it is necessary to restrict the content of aluminum, titanium, and possibly silicon. Orig. art. has: 4 figures and 3 tables.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 001 OTHER: 000

Card 2/2

ACC NR: AP6028582 SOURCE CODE: UR/0129/66/000/008/0006/0011

AUTHOR: Spiridonov, V. B.; Vlasova, T. A.; Iordanskiy, V. N.

ORG: none

TITLE: An electron-microscopic study of the Al-Zn-Mg alloy system. [Delivered at the Seminar on Advanced Technology for Heat Treatment of Light Alloys, Leningrad, December 1963]

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 8, 1966, 6-11

TOPIC TAGS: aluminum alloy, zinc, magnesium, heat treatment, precipitation hardening, electron microscopy, phase structure, crystal lattice parameter, mechanical property, stress corrosion, grain boundary stability

ABSTRACT: An electron-microscopic study was made of the Al-Zn-Mg alloy system. Fifteen alloys were used having the following composition ranges: 3.25-4.90% Zn, 1.30--4.32% Mg, trace--0.65% Mn, trace--0.22% Fe, trace--0.10% Si, trace--0.12% Cr, trace--0.22% Zr, trace--0.05% Cu, and trace--0.17% Ag. Foils of 0.10-0.15 mm thickness were quenched in air or water from 450°C and aged at 20-275°C. The aging mechanism of the alloys were related to stress corrosion behavior. Electron micrographs of AT3M and V92 alloys showed G-P zones 30-50 Å in diameter after room temperature aging. Aging at 100°C for 100 hr (maximum strength condition) resulted in $MgZn_2$ formation on

Card 1/3 UDC: 669.15'72:620.187

L 04199-67
ACC NR: AP6028582

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{111} matrix planes. Strain fields due to coherency were observed around the $MgZn_2$ particles after aging at 130-140°C, while higher aging temperatures merely changed the dimensions of the $MgZn_2$ particles. At 200-250°C, $Al_2Mg_3Zn_3$ (T-phase) precipitated. Lattice parameters and plane spacings for the precipitates and mechanical properties for different aging conditions are presented. The relation between grain boundary precipitation and stress corrosion was established for these alloys. After quenching from 450°C and aging to different conditions, the relative amount of both grain boundary and adjacent boundary zone precipitation was obtained. Zones adjacent to grain boundaries were relatively free of precipitation and widened as a function of aging temperature, corresponding to an increase in grain boundary precipitation. Particle dimensions were 1500-2500 Å on grain boundaries, 1000-2000 Å on adjacent zones, and 250-400 Å within grains. Manganese and chromium did not affect the size or distribution of precipitates, although they improved the stress corrosion properties. The addition of 0.16-0.22% Zr resulted in a more uniform distribution and finer size of precipitate; the particle size did not exceed 250 Å. Titanium and scandium had the same effect as zirconium. The greatest structural changes were caused by copper and silver additions; particle size did not exceed 150 Å and the precipitate-free zone diminished to a width of 400-500 Å. Explanations based on increased vacancy concentrations as a result of alloying are presented. Two methods are recommended for decreasing the stress corrosion tendencies of these alloys: 1) decreasing the vacancy concentration before aging by lowering the cooling rate during quenching; or raising the

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ACC NR: AP6028582

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aging temperature but necessarily adding Cr, Mn, Fe, Si, Ti, or Zr; 2) raising the vacancy concentration for a more disperse and uniform structure by adding Zr, Ti, Sc, Cu, or Ag to increase the vacancy solubility. Orig. art. has: 5 figures, 5 tables.

SUB CODE: 11,20/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 006

1/3 LC

SAMOILOV, S.I.; SPIRIDONOV, V.D.

Improving the machinability of G 13 L steel. Trudy Ural.politekh. inst. no.129:113-216 '63 (MIRA 17:8)

[redacted]

[redacted], V.D.

[redacted] wide-band operational amplifiers with an efficient compensation of filament drift. Priborostroenie no.8:22-23 Ag '64.
(MIRA 17:10)

L 40068-66 EWT(1)

ACC NR: AP6019779 SOURCE CODE: UR/0119/66/000/006/0013/0016

AUTHOR: Norkin, K. B. (Candidate of technical sciences); Spiridonov, V. D. (Engineer); Cherkashina, A. G. (Engineer)

39
36
B

ORG: none

TITLE: Wideband amplifier with a semiconductor modulator-demodulator channel

SOURCE: Priborostroyeniye, no. 6, 1966, 13-16

TOPIC TAGS: wideband transmission, dc amplifier, junction diode

ABSTRACT: The authors discuss the development of an amplifier system which can be used as a control element for guided models. The requirements of high grain, and stable wideband amplification of control signals are met through the use of semiconductor elements and a modulation-demodulation technique within the amplifier. The modulator--demodulator channel is solid state, the dc amplifier uses tubes. A block diagram of the system is shown in figure 1. The design of the modulator is based on the nonlinear voltage dependent junction capacitance of special pn diodes (varicaps). Principles of operation, characteristics, and specifications are outlined. The demodulator converts the amplitude variations of the input signal into pulse-width variations of a 100Khz rectangular wave carrier signal, using variable storage time of carriers in transistors. The average of the demodulator pulses is then taken. Waveforms illustrat-

UDC: 621.375.121:621.375.4

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ACC NR: AP6019779

fed into a dc amplifier using electron tubes. The output voltage from the dc amplifier can be made to vary between -100 and +100 volts. The overall amplification factor of the total amplifier system is 10^7 at dc and greater than 100 at 100Khz. The modulator-demodulator channel increases the system gain by a factor of more than 1000. Because of the careful design, no special temperature compensation circuits are required, yet the system performs as specified over a temperature range of 10-60°C. Yu. N. Vladimirov, Yu. A. Mel'nikov, and V. M. Nesterova took part in the development of the device. Orig. art. has: 7 figures, 1 table. [14]

SUB CODE: 09/ SUBM DATE: none/ ORIG REF: 010/ OTH REF: 001

Card 3/3

SPIRIDONOV, V.I., inzh.

Building 110 kv. lines on centrifuged reinforced concrete supports having no crossbars. Elek. sta. 29 no.10:39-42 O '58. (MIRA 11:11)
(Electric lines--Poles)

ROMENSKIY, L.P., kand.tekhn.nauk; SPIRIDONOV, V.I., inzh.; MARIN, A.A., inzh.
BUKHTOYAROV, N.G., inzh.

Using flexible cables in mines. Bezop.truda v prom. 5:4-5 Jl '61. (MIRA 14:6)

1. Voroshilovskiy gornometallurgicheskiy institut.
(Electric cables)

SPIRIDONOV, V.I., inzh.

Use of semiconductors in a.c. arc quenching systems. Vest. elektroprom. 34 no.1:33-36 Ja '63. (MIRA 16:1)
(Voltage regulators) (Electric controllers)

MEL'NIKOV, N.V.; VINITSKIY, K.Ye., kand. tekhn. nauk; POTAPOV, M.G., kand. tekhn. nauk; Prinimali uchastiye: ZHUKOV, A.A.; KOSYREV, V.I.; SPIRIDONOV, V.I.

Principles of technological layouts for open-pit mines using conveyor haulage exclusively. Nauch. soob. IGD 11:3-16 '61. (MIRA 16:4)

1. Chlen-korrespondent AN SSSR (for Mel'nikov).
(Conveying machinery)

SPIRIDONOV, V.I., gornyy inzh.

Using belt conveyors to transport rocks and ores. Nauch. trudy Mosk. inst. radioelek. i gor. elektromekh. no.46:39-50 '62. (MIRA 17:1)

SPIRIDONOV, V. K.

G.P. MININ, and V. K. SPIRIDONOV

"Electro-Measuring Instruments" (Study tables) published by State Publishers of Energetic Literature, Moscow, 1947.

SPIRIDONOV, V. K., Eng.

Electric Cables

Locating the damage in a cable caused by an attenuating short circuit by the method of oscillating discharge, Elek. sta. 24, No. 1, 1953.

Describes oscillatory discharge method developed at author's lab for locating "floating" (appearing at high voltages and disappearing at low voltages) breakdowns in power cables. Exptl measurements made with lab's OZhO ostilloscope (photo, block diagram included). Method locates faults up to 1.5-2 km away without causing complete breakdown at fault location.

255T48

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

SPIRIDONOV, V. K.

G. P. Minin and V. K. Spiridonov, Elektroizmeritel'nyye pribory (Electrical Measuring Instruments), Gosenergoizdat.

A series of 14 instructional tables, showing basic electrical measuring instruments: ammeters and voltmeters, magnetoelectric, electromagnet and electrodynamic systems, ferrodynamic and induction wattmeters, single-, and triple-phase meters, electromagnetic and ferrodynamic phase meters, vibration-, and needle-frequency meters, automatic recording meters, megohmmeters, current measuring clips, and measuring transformers. The tables include graphic representations of the construction of electrical measuring instruments used in power engineering.

The tables constitute a graphic aid for persons studying the fundamentals of electrical measuring instruments, and may be used by technical school students.

SO: Sovetskiye knigi (Soviet Books), No. 183, 1953, Moscow, (U-6472)

SPIRIDONOV, V. K.

Spiridonov, V. K. -- "Determination of the Distance to the Point of the Damage in Power Cables in Protective Testing." Min Higher Education USSR, Moscow Order of Lenin Power Engineering Inst. imeni V. M. Molotov, Moscow, 1955 (Dissertation for the Degree of Candidate in Technical Sciences)

SO: Knizhnaya Letopis', No. 23, Moscow, Jun 55, pp 87-104

SPIRIDONOV, V.K.

PHASE I BOOK EXPLOITATION 1056

Minin, G.P. and Spiridonov, V.K.

Elektroizmeritel'nyye pribory; uchebnyye tablitsy (Electric Measuring Instruments; Instruction Charts) [Leningrad] Gosenergoizdat, 1957. 16 charts in folder. No. of copies printed not given.

No additional contributors mentioned.

PURPOSE: This set of drawings of electrical measuring instruments is addressed to students in electrical engineering schools.

COVERAGE: This is a collection of 15 detailed drawings in color showing cross-sectional cutaway and general views of the principal types of electrical measuring instruments. Each drawing contains a legend indicating the instrument parts and some include the circuit diagram of the instrument. No personalities are mentioned. There are no references.

Card 1/2

SPIRIDONOV, V.A.

SPIRIDONOV, V.A., kand. tekhn. nauk.

The effectiveness of using gas derived from the underground gasification of coal for fuel in gas-turbine electric power stations. Mekh. trud. rab. 11 no.10:25-27 O '57. (MIRA 10:11)
(Electric power plants) (Gasification of coal)

MANN, A.K., kand.tekhn.nauk; SPIRIDONOV, V.K., kand.tekhn.nauk

Use of electric waves for locating damages in electric cables. (MIRA 13:9)
Trudy VNIIE no.8:28-34 '59.
(Electric lines--Testing)

SPIRIDONOV, V.K., kand.tekhn.nauk

Electronic microsecond meter for determining the distance to the place of damage in a power cable. Trudy VNIIE no.8:44-61 '59. (MIRA 13:9)

(Electric cables--Testing)

LEBEDEV, N.P., inzh.; LIVSHITS, L.S., inzh.; SPIRIDONOV, V.M., inzh.

Precast prestressed concrete smoke stacks. Mont. i spets. rab. v stroi. 24 no.5:9-12 My '62. (MIRA 15:5)

1. Eksperimental'no-konstruktorsk ye byuro Nauchno-issledovatel'skogo instituta stroitel'noy promyshlennosti.
(Chimneys) (Precast concrete construction)

Spiridonov, V.M.

112-4-7664

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, Nr 4, (USSR)

AUTHOR: Spiridonov, V.M.

TITLE: Research on the Electrical Conductivity of Common Pine Wood (Issledovaniye elektroprovodnosti drevesiny sosny obyknovennoy)

PERIODICAL: Sb. nauch. tr. Belorus. lesotekhn. in-t, 1956, Nr 8, pp. 222-229

ABSTRACT: Bibliographic entry.

Card 1/1

SPIRIDONOV, V.M.

Electrometric instrument for measuring high resistances. Sbor. nauch.trud.BLTI no.10:435-439 '57. (MIRA 11:12)
(Electric meters)

83497
S/123/59/000/008/024/043
A004/A002

18.7000 also 2208

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 8, p. 110, # 29396

AUTHORS: Perekhod, G. V., Spiridonov, V. M.

TITLE: On the Problem of Investigating the Spark Discharge Effect on Metal

PERIODICAL: Sb. nauchn. rabot. Belorussk. lesotekhn. in-t, 1958, No. 9, pp. 267-274

TEXT: The authors cite investigation results of experimental studies of the effects of single electric discharges on 85Хф (85KhF) tool steel. The RCL capacitor system served as pulse source. The discharge was effected between a cylindrical electrode of 0.5 mm^2 cross-section and a plate of 10x30x2 mm size, used as cathode. The voltage was varied in the range of 50 to 260 v, the capacitance from 40 to 400 microfarad, and the inductance from 0 to 160 microhenry. It was found that the area of the erosion hole grows proportionally if the voltage is increased at constant capacitance, and if the capacitance increases

Card 1/2

SPIRIDONOV, V.M.

Improving the feeding mechanism design for a molding machine. Sbor. vnedr.rats.pred. v les. i meb.prom. no.2:70-71 '59. (MIRA 13:8)

1. Derevoobrabatyvayushchiy zavod No.1 tresta "Stroydetal' No.82" Glavleningradstroya.
(Woodworking machinery)

SPIRIDONOV, V.M.

Automatic cut-off of a magnetic starter upon the blowing of a fuse. Sbor.vnedr.rats.pred. v les. i meb.prom. no.2:153-155 '59. (MIRA 13:8)

1. Derevoobrabatyvayushchiy zavod No.1 tresta "Stroydetal' No.82" Glavleningradstroya.
(Woodworking machinery--Starting devices)
(Electric switchgear)

SIRIDONOV, V.M.; TSYGANKOV, I.I.

Prospects for using plastics in structural elements. Stroi. mat. 10 no.10:3-5 O '64. (MIRA 18:2)

L 9796-66 EWT(m)/EWP(w)/ETC(m) WW/EM

ACC NR: AP5028535 SOURCE CODE: UR/0286/65/000/020/0129/0129

AUTHORS: Spiridonov, V. M.; Boroditskiy, L. S.

ORG: none

TITLE: Vibration damping method using a vibration damping mass for metal constructions which form ship compartments. Class 65, No. 175836 [announced by Central Scientific Research Institute of Shipbuilding Technology (Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii sudostroyeniya)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 129

TOPIC TAGS: vibration damping, shipbuilding engineering, ship component

ABSTRACT: This Author Certificate presents a vibration damping method using a vibration damping mass for metal constructions which form ship compartments. To decrease structural noise, the vibration damping mass consists of a thickened strip which serves as the joint between adjacent, compartment-forming elements such as decks and partitions (see Fig. 1). To decrease noise in compartments which are formed by cross-wise connected elements, a second version places the strip which represents the vibration damping mass at the cross-wise joint symmetrically with respect to the elements. To increase the impedance of a given joint between compartment-forming elements, a third version spaces the elements with thickened joints at a distance of $(30-40)\sqrt{\delta}$ where δ = thickness of wall.

UDC: 629.12.011.22.—752.8

Card 1/2

L 9796-66

ACC NR: AP5028535

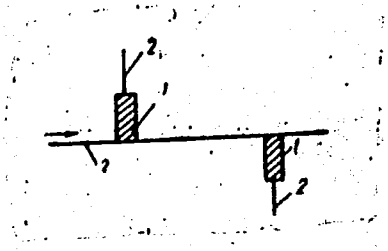


Fig. 1. 1 - Thickened strip;
2 - adjacent elements.

Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 03Feb64

Card 2/2

AFANAS'YEV, V.N.; SPIRIDONOV, V.M.

Provide industrial construction with high quality polymer materials. Prom. stroi. 43 no.9:2-3 '65. (MIRA 18:9)

SPIRIDONOV, V. N.

"Tolerances and Fits in Heavy Machine Building." Sub 10 Dec 51, Central Sci Res Inst of Technology and Machine Building (TsNIITMash)

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

SPIRIDONOV, V.N.; PROKOPENKO, A.P.; KOLESNIKOV, D.G.

Phytochemical study of the horsechestnut. Report No. 1: Isolation of the total amount of flavonoids from the leaves. Med.prom. 16 no.4:14-16 Ap '62. (MIRA 15:8)

1. Khar'kovskiy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut. (HORSECHESTNUT) (FLAVONOIDS)

SPIRIDONOV, V.N.; ZHDKOPENKO, A.P.; KOLESNIKOV, D.G.

New kaempferol glycoside of horse chestnut (Aesculus hypocastanum L.). Zhur. ob. khim. 34 no.12:4128-4129 D '64 (MIRA 18:1)

1. Khar'kovskiy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut.

SPIRIDONOV, V. P.

USSR/ Chemistry - Analytical chemistry

Card 1/1 Pub. 12 - 20/51

Authors : Akishin, P. A.; Vilkov, L. V.; and Spiridonov, V. P.

Title : Electronographic study of the molecular structure of zinc halides $ZnCl_2$, $ZnBr_2$ and ZnJ_2

Periodical : Dok. AN SSSR 101/1, 77-80, Mar 1, 1955

Abstract : The advantages of the electronographic method for the study of molecular structures of inorganic compounds are analyzed. Electronographic study of $ZnCl_2$, $ZnBr_2$ and ZnJ_2 molecules showed that all possess a linear structure. This configuration was seen to correspond to the valent state of the central Zn-atom. It was observed that the interatomic spaces in the Cl, Br and J-derivatives of zinc vary in accordance with the linear law depending, of course, upon the ordinal number of the halide. The values of the interatomic spaces are tabulated. Six references: 2 USSR, 1 English, 1 German and 2 USA (1934-1953). Tables; graphs.

Institution : The M. V. Lomonosov State University, Moscow

Presented by : Academician N. N. Semenov, September 22, 1954

SPIRIDONOV, V. P.

USSR/ Chemistry - Structure of molecules

Card 1/1 Pub. 147 - 18/35

Authors : Akishin, P. A.; Spiridonov, V. P.; Naumov, V. A.; and Rambidi, N. G.

Title : Electronographic investigation of molecular structures. Part 3. Cadmium halides

Periodical : Zhur. fiz. khim. 30/1, 155-160, Jan 1956

Abstract : The geometrical parameters of molecules of all cadmium halides were established through electronographic investigation. The molecules investigated were found to have a linear configuration. It was observed that the space Cd - F does not correspond with the experimental law governing the linear changes in the interatomic metal-halide spaces in many halogen derivatives depending upon the atomic number of the given halide. Thirteen references: 4 USSR, 3 Germ., 5 USA and 1 Indian (1889-1955). Tables; graphs.

Institution : Moscow State University im. M. V. Lomonosov

Submitted : May 26, 1955

AKISHIN, P.A.; SPIRIDONOV, V.P.; NAUMOV, V.A.

Electron diffraction study of the structure of the ZnF_2 molecule. Zhur.fiz.khim. 30 no.4:951-953 Apr. '56. (MLRA 9:9)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Zinc fluoride)

70-4-5/16

Spiridonov

AUTHORS: Akishin, P.A. and Spiridonov, V.P.

TITLE: Electronographic Investigation of the Structures of Molecules of the Halides of Group II Elements. (Elektronograficheskoye issledovaniye stroyeniya molekul galogenidov elementov II gruppy periodicheskoy sistemy Mendeleyeva.)

PERIODICAL: Kristallografiya, 1957, Vol.2, Nr 4, pp.475-483 (USSR).

ABSTRACT: The interatomic distances in 30 compounds of the MX_2 type have been found by electron diffraction from molecules of these compounds in the gas phase. The electronograph used was that of the Laboratory for the Investigation of Molecular Structure in the Chemical faculty of the Moscow State University (illustrated). Even at 1000 C these Group II halides are not very volatile and a special furnace enabling temperatures of more than 2000 C to be reached was built in to the specimen chamber together with a condenser. At the highest temperatures light from the hot vapour and from the heater tended to fog the film so that ion-optic (MK type) plates were used up to 1500 C and diapositive plates above this. The latter were protected by an evaporated layer of Ca, an Al foil of 5-7 μ thickness or by a layer of indian ink on the emulsion. A drybox was used in preparing the specimens for the evaporator. About 50 exposures were made

Card 1/3

Spiridonov, V.P.

USSR/Physical Chemistry - Molecule, Chemical Bond. B-4

Abs Jour: Referat. Zhurnal Khimiya, No 3, 1958, 6900.

Author : V - P.A. Akishin, V.P. Spiridonov, G.A. Sobolev, V.A. Naumov;
VI - P.A. Akishin, V.P. Spiridonov, G.A.Sobolev.

Inst :

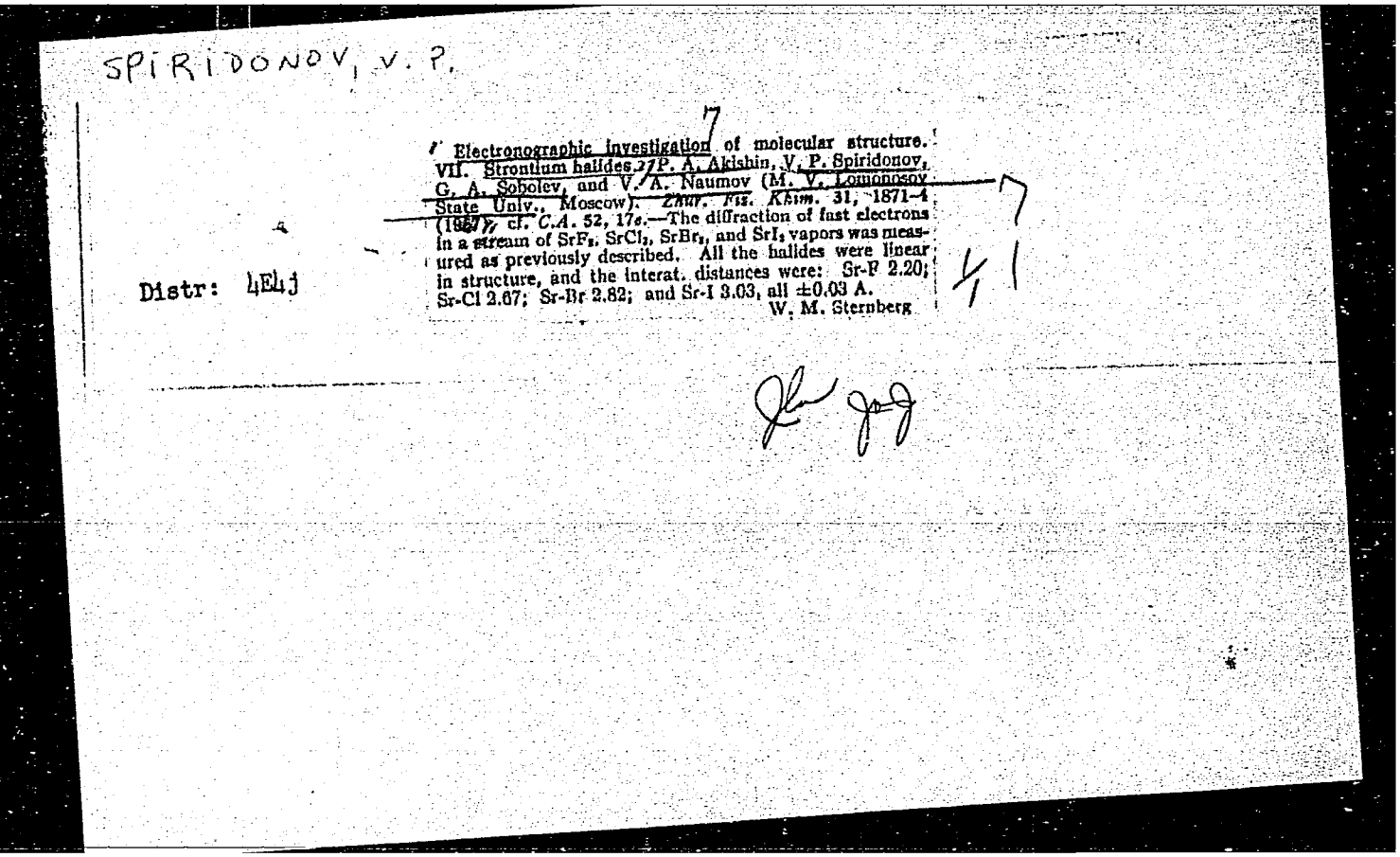
Title : Electronographic Investigation of Molecular Structure. V. Magnium Halides. VI. Calcium Halides.

Orig Pub: Zh. fiz. khimii, 1957, 31, No 2, 461-466; No 3, 648-652.

Abstract: V. The structure of MgF_2 (I), $MgCl_2$ (II) and $MgBr_2$ (III) in gaseous state was investigated by the electron diffraction method. Peaks of 1.78 and 3.52 A referred to the distances Mg - F and F - F correspondingly were revealed on the curve of radial distribution for I; 2.18 (Mg - Cl) and 4.36 (Cl - Cl) were revealed for II, and 2.34 (Mg - Br) and 4.36 (Br - Br) were revealed for III. In all these cases the best agreement between the theoretical and visual intensity curves (with the

-5-

Card : 1/2



SPIRIDONOV, V. P.

Distr: 4E4j

Electronographic investigation of molecular structure. VII. Strontium halides. P. A. Akishin, V. P. Spiridonov, G. A. Sobolev, and V. A. Naumov (M. V. Lomonosov State Univ., Moscow). *Zhur. Fiz. Khim.* 31, 1871–4 (1957); cf. *C.A.* 52, 17*e*.—The diffraction of fast electrons in a stream of SrF_2, $SrCl_2$, $SrBr_2$, and SrI_2 vapors was measured as previously described. All the halides were linear in structure, and the interat. distances were: Sr-F 2.20; Sr-Cl 2.67; Sr-Br 2.82; and Sr-I 3.03, all ±0.03 A.
W. M. Sternberg

SPIRIDONOV, V. P.

SOV/120-58-2-18/37

AUTHORS: Akishin, P. A., Vinogradov, M. I., Danilov, K. D., Levkin, N. P., Martinson, Ye. N., Rambidi, N. G. and Spiridonov, V. P.

Title: An Electronograph for Studying the Structure of Molecules of Non-Volatile Compounds (Elektronograf dlya issledovaniya stroyeniya molekul trudnoletuchikh soyedineniy)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 2, pp 70-74 (USSR)

ABSTRACT: One fo the most widely used and effective methods of studying the geometrical structure of complex molecules is the electronographic method. The method is based on the study of the diffraction of fast electrons by the vapour of the substance under investigation. In the literature there is very little information on the geometry of the molecules of non-volatile compounds. This is due to experimental difficulties associated with such studies. Maxwell and his collaborators have described an electronograph with a high temperature evaporator which was used to study the structure of molecules of substances whose boiling points were 1200-1400°C. The present paper describes an electronograph which was constructed in 1954 and can be used for substances with boiling points up to 2500°C. The instrument consists of an evaporator in which the substance under investigation is vapourised by electron bombardment, an electron gun and a special "sector device". Attempts were made and are described of preventing the radiation from the evaporator from reaching the photographic plate when studies are made of the diffraction pattern produced by vapours at high temperatures. The most effective way of screening the emulsion was by covering it with a thin layer of black ink which can

Card 1/2

An Electronograph for Studying the Structure of Molecules of Non-Volatile Compounds.

be washed off before developing. The electronograph described in the present paper has been used to determine the configuration and geometrical parameters of 30 molecules of non-volatile halides of elements of the second group in the periodic table, many of which have boiling points in the range 1500-2500°C. These data were given in Refs. 4-11. There are 5 figures, 1 table and 11 references, of which 2 are English and 9 are Soviet.

ASSOCIATION: Khimicheskiy fakul'tet MGU (Department of Chemistry of the Moscow State University)

SUBMITTED: July 11, 1957.

Card 2/2 1. Complex compounds 2. Molecules--Structural analysis
3. Electronic equipment--Applications

SPIRIDONOV, V.P.

76-1-8/32

AUTHORS: Akishin, P. A., Spiridonov, V. P., Sobolev, G. A., Naumov, V. A.

TITLE: Studies of Molecular Structure by Electron Diffraction. VIII. Barium Halides (Elektronograficheskoye issledovaniye stroyeniya molekul. VIII. Galogenidy bariya).

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 1, pp. 58-61 (USSR)

ABSTRACT: For the first time the hitherto in literature lacking data on the configuration and the geometric parameters of the molecules of all vaporous halides of barium are obtained. That is to say of barium fluoride, barium chloride and barium iodide. The taking of electronograms was carried out by means of an apparatus with an evaporator for high temperatures according to the method used by the authors of earlier works (ref. 1 to 6). The evaluation of electronograms was carried out according to two methods: the radial distribution according to the variant of Uolter-Bich and that of consecutive approximations. With the evaluation according to the second method the authors established that the distribution of the intensity of stray electrons of the barium halide vapors, observed experimentally is well represented by the theoretical

Card 1/3

intensity curves I(s) (which had been calculated on the condition of a linear configuration of the barium halide molecules). The asymmetry of the rings on the electronograms of barium halide vapors in less marked than with those of the corresponding halides of calcium and strontium (ref. 5,6). Because of the greater charge value of the barium nucleus compared with the charges of calcium- and strontium nuclei, the valence angle in the molecules of barium halides according to the method of consecutive approximation can be determined only less exact than with the molecules of halides of calcium and strontium.- In the case of all compounds investigated a linear molecular structure was stated and the values of the intermolecular distances were found. The error in the determination of these distances Ba- X is ±1- 1,5 %. The authors stated that the interatomic distance Ba-X in chloride-, bromide- and iodide molecules changes approximatively according to the linear law in dependence on the ordinal number of the halide, while the distance Ba-F deviates strongly from this regularity.

Studies of Molecular Structure by Electron Diffraction. 76-1-8/32
VIII. Barium Halides

There are 2 figures, 5 tables, and 7 references, 6 of which are Slavic.

ASSOCIATION: Moscow State University imeni M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova).

SUBMITTED: September 13, 1956

AVAILABLE: Library of Congress

Card 3/3

SOV/76-32-7-38/45

AUTHORS: Akishin, P. A., Spiridonov, V. P., Khodchenkov, A. N.

TITLE: On the Electron Diffraction Investigations of the Molecular Structure of the Halides of Bivalent Tin and Lead (K voprosu ob elektronograficheskom issledovanii stroyeniya molekul galogenidov dvukhvalentnykh olova i svintsa)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 7, pp. 1679 - 1681 (USSR)

ABSTRACT: According to quantum chemical concepts a triangular configuration may be assumed for the molecules SnX_2 and PbX_2, and a tetrahedric structure for the molecules SnX_4 and PbX_4. While, on the hand, reliable experimental information on the structure of the latter two is known to exist, the problem of the structure of the former two has not yet been solved. Investigations carried out by Lister and Sutton (Ref 4) which were checked by the authors of this paper according to the equation by Schomaker (Ref 6) using the data obtained by the former, proved to be insufficient. For this reason the experiments were repeated, using a more perfect apparatus and method of determina-

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tion. According to the experimental results obtained the following was found: The electron diffraction investigations of the gaseous halides of SnX_2 and PbX_2 make possible the determination of the inter—atomic distance metal - halide, however, not that of the molecule configuration. It must be taken into account that molecules of the types MeX, Me_2X_2, Me_2X_4, and others are contained in the vapors. The problem of the molecular composition of the vapor could be solved by the use of mass spectrometric methods, and that concerning the molecular configuration by radiospectroscopic methods. There are 1 figure, 1 table, and 7 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova (Moscow State University imeni M.V.Lomonosov)

SUBMITTED: October 17, 1957

On the Electron Diffraction Investigations of the Molecular Structure of the Halides of Bivalent Tin and Lead SOV/76-32-7-38/45

1. Lead halides--Molecular structure 2. Tin halides--Molecular structure
3. Electron diffraction analysis--Applications

Card 3/3

AUTHORS: Akishin, P. A., Spiridonov, V. P. SOV/76-32-7-39/45

TITLE: The Electron Diffraction Investigation of the Molecular Structure of MgJ_2 (Elektronograficheskoye issledovaniye stroyeniya molekuly MgJ_2)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 7, pp. 1682 - 1683 (USSR)

ABSTRACT: After the three other halides of magnesium had been investigated in the previous paper the authors in this paper gave the results of the investigation of MgJ_2. The substance to be investigated was obtained by the action of iodine vapors on powdery magnesium metal in vacuum under heating. The new electronograph was used and the authors worked according to the method already described, the electronograms obtained being evaluated according to the method of consecutive approximations and the radial distribution in variants. The electronograms taken show up to 8 interference rings of a certain intensity distribution, which is given; the maxima of intensity drop uniformly together with the angle of scattering. The corresponding graphs as well as a table containing the single values obtained are given. The following

Card 1/3

The Electron Diffraction Investigation of the Molecular Structure of MgJ_2 SOV/76-32-7-39/45

geometrical parameters are given for the MgJ_2 molecule in correspondence with the results of the investigation:

$$r_{(Mg-J)} = 2,52 \pm 0,03 \text{ Å}$$

$$\angle J - Mg - J = 180 \pm 30^0$$

There are 2 figures, 1 table, and 5 references, 5 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova (Moscow State University imeni M.V.Lomonosov)

SUBMITTED: November 27, 1957

Card 2/3

The Electron Diffraction Investigation of the Molecular Structure of MgJ_2 SOV/76-32-7-39/45

1. Magnesium iodide--Molecular structure 2. Magnesium iodide--Electron diffraction analysis

Card 3/3

AUTHORS: Akishin, P. A., Spiridonov, V. P., Sobolev, G. A. 20-118-6-24/43

TITLE: Electron Diffraction Investigation of the Structure of Beryllium Halide Molecules (Elektronograficheskoye issledovaniye stroyeniya molekul galogenidov berilliya)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 118, Nr 6, pp. 1134-1137 (USSR)

ABSTRACT: The present paper investigates the structure of the vaporous beryllium halides - of fluoride, chloride, bromide, and iodide for which no data exist in publications on the geometrical parameters. The production processes for the individual preparations are shortly enumerated. The apparatus and the measuring methods for the detection of electronographs were described already earlier (Ref. 1). For all vaporous beryllium halides investigated here 8 - 10 series of electronographs each were taken. These electronographs had the following intensity distribution: the even (2., 4., 8., and 10.) maxima are intensive and the uneven (3., 5., 7., and 9.) have a lower intensity than the even maxima. The intensity of the even and uneven maxima decreases gradually with increasing scattering angle. The minima lying before

Card 1/3

the even and uneven maxima, respectively, are deep and not deep, respectively. The electronographs were exploited here with the method of the radial distribution and then with the method of successive approximations. The curves of the radial distribution $r^2D(r)$ of the molecules of all beryllium molecules investigated here have two distinctly marked peaks each of which can be interpreted in a natural way as the distances r(Be - X) and r(X - X). Other peaks did not exist. Thus the data obtained by means of the method of radial distribution obviously prove that the electronographs of the vapors of the beryllium halides correspond to the linear triatomic molecules BeX_2. A diagram illustrates the theoretical curves of the intensity of the scattered BeX_2-molecules which well describe all characteristic peculiarities of the electronographs of the vapors of the beryllium halides. The results of the computations are compiled according to the method of successive approximation. The author suggests three types for the structure of the beryllium halides, among them an octahedral type. The two methods used here for the exploitation of the electronographs yield

AKISHIN, P.A.; RAKHIDI, G.; SPIRIDONOV, V.; P. NAUMOV, A.

"Electron Diffraction by Gases at the High Temperatures"
A report presented at the Symposium of the International Union Conference of Crystallography Leningrad 21-27 May 1959

SO: B 3,135,471 28 July 1959

SOV/76-33-1-4/45

5(4)

AUTHORS: Akishin, P. A., Spiridonov, V. P., Khodchenkov, A. N.

TITLE: Electron Diffraction Investigation of the Molecular Structure (Elektronograficheskoye issledovaniye stroyeniya molekul) IX. Halides of Bivalent Mercury (IX. Galogenidy dvukhvalentnoy rtuti)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 1, pp 20-24 (USSR)

ABSTRACT: Since publications (Refs 1-3) give different values for the interatomic distances mercury-halogen, a new determination of the molecular parameters of HgX_2 is carried out by use of an improved apparatus and calculation method. The structures of the bivalent mercuric chloride, mercuric bromide, and mercuric iodide were determined. Determinations of HgF_2 were not successful. The electron diffractions were recorded by an electronograph of the Moscow State University. The calculations were carried out according to two methods, the method of gradual approach and of radial distribution. The curves of the radial distribution which were plotted according to Uolter and Bich's equation (Fig 1) indicated a linear configuration of the HgX_2

Card 1/2

Electron Diffraction Investigation of the Molecular Structure. IX. Halides of Bivalent Mercury

molecules. In order to compare the results which were obtained visually and photometrically, microphotometric investigations of the HgJ_2 molecules were carried out by means of a microphotometer MF-4. The investigations carried out by means of electron diffraction showed that the molecules $HgCl_2$, $HgBr_2$ and HgJ_2 have a linear structure; the geometric parameters are compared with reference data (Table 4). In the case of the distances Hg-Cl and Hg-Br the values obtained coincide with those obtained by radiospectrographic methods (Ref 13). There are 2 figures, 4 tables, and 13 references, 6 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: May 17, 1957

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5.2400(A)

5(4) SOV/20-129-6-33/69

AUTHORS: Akishin, P. A., Spiridonov, V. P.

TITLE: The Electron Diffraction Investigation of the Structure of the Molecule of Boron Sulphide

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 6, pp 1317-1320 (USSR)

ABSTRACT: The authors give a short description of the production and degasification of the pure boron sulphide used. The vapor electron diffraction patterns of B_2S_3 were recorded at 800-900°C with and without a rotating sector and with exposures of between 10 sec and 2 min. Electron wave length was 0.0402-0.0573 Å. The diapositive plates used were covered with india ink in order to protect the evaporator from light radiation, which was washed off before the plates were developed. 10 electron diffraction patterns were produced, which were deciphered by the method of the radial distribution in the variation according to J. and I. Karle (Refs 3-5) and by the method of successive approximations. The curve D(r) of radial distribution drawn on the basis of experimental data is shown in figure 1. As structurally chemical possible configurations of the B_2S_3-molecule the authors investigated the bipyramide with three S-atoms in an

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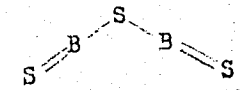
The Electron Diffraction Investigation of the Structure of the Molecule of Boron Sulphide

equilateral plane triangle. Both B-atoms are located at equal distances on both sides of the plane of the triangle. Besides, the plane angular configuration



was investigated. From the curve D(r) it follows that the bipyramide is not possible, whereas the plane angular configuration corresponds to measured results. Also by means of successive approximation (Fig 2, Table 1) the plane angular configuration is found, among all models, to correspond best to the experimental data if considerable deformation vibrations of the valence angle on the central sulfur atom are assumed. The following values are calculated for this configuration:

$r(B - S) = 1.81 \pm 0.02$ Å; $r(B = S) = 1.65 \pm 0.03$ Å,
$< B - S - B = 96 \pm 5^{\circ}$. The authors found the value for $r(B = S)$ to be in good agreement with the distance in the molecule of BS (1.62 Å). There are 2 figures, 1 table, and 8 references, 3 of which are Soviet.

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SOV/20-129-6-33/69

The Electron Diffraction Investigation of the Structure of the Molecule of Boron Sulphide

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: July 16, 1959, by V. N. Kondrat'yev, Academician

SUBMITTED: July 15, 1959

VILKOV, L. V.; ZASORIN, Ye. Z.; RAMBIDI, N. G.; SPIRIDONOV, V. P.

"Electron Diffraction Investigation of the Molecular structure of Some Gaseous Oxides"

SUMMARY: There exists very little data in the literature on the structure and geometrical parameters of gaseous oxides of various elements. However, the Diffraction Laboratory of the Department of Chemistry of Moscow University carried out systematic electron-diffraction investigations of the geometry of various oxides in the vapor state, and in this paper the authors give us the results of the electron-diffraction study of the following gaseous oxides:

Li_2O, B_2O_3, P_4O_{10}, Sb_4O_6, and Cl_2O_7

Report to be submitted at the International Conference on Magnetism and Crystallography, Kyoto, Japan, 25-30 Sept 1961

Moscow State University

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652710012-6"

..., P...; SHIBLOVOV, V.I.

Structure of gaseous lithium metaborate and sodium metaborate molecules. Zhur. strukt. khim. 2 no. 1:63 Ja-F '61. (MIRA 14:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Lithium borate) (Sodium crate)

AKISHIN, P.A.; SPIRIDONOV, V.P.

Electron diffraction examination of the structure of an antimony (III) oxide molecule. Zhur.strukt.khim. 2 no.5: 542-544 S-O '61. (MIRA 14:11)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Antimony oxide) (Chemical structure)

TATEVSKIY, V.M.; SPIRIDONOV, V.P.; AKISHIN, P.A.

Law governing the interatomic distances of molecules of halides of various groups of the periodic table. Dokl.AN SSSR 138 no.3:621-624 My '61. (MIRA 14:5)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom A.N. Frumkinym.
(Halides) (Molecules)

S/192/62/003/003/002/006
D228/D307

AUTHORS: Spiridonov, V. P., Akishin, P. A. and Tsirel'nikov, V. I.

TITLE: Electronographic investigation of the structure of zirconium and hafnium tetrachloride molecules in the gaseous phase

PERIODICAL: Zhurnal strukturnoy khimii, v. 3, no. 3, 1962, 329-330

TEXT: The molecular structure of $ZrCl_4$ and $HfCl_4$ in the gaseous phase was investigated electronographically. This question is important in view of the need for information about the thermodynamic properties of these chlorides. The electronograms were obtained at 200 - 300°C and processed photometrically at the Computer Center of the MGU (Moscow State University). Experimental and theoretical data both suggest that the molecules possess the structure of the true tetrahedron. The values found for the internuclear Me-Cl distances agree well with those of previous workers. The closeness

AKISHIN, P.A.; SPIRIDONOV, V.P.; MISHULINA, R.A.

Electron diffraction examination of the evaporation products of selenium tetrachloride and tetrabromide. Vest.Mosk.un.Ser.2: Khim. 17 no.2:23-25 Mr-Ap '62. (MIRA 15:4)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.
(Selenium chloride) (Selenium bromide)
(Electron diffraction examination)

S/076/62/036/009/006/011
B101/B102

AUTHORS: Spiridonov, V. P., and Tatevskiy, V. M.

TITLE: Some rules governing the internuclear distances in diatomic molecules

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 9, 1962, 2024 - 2029

TEXT: The following relations for the internuclear distances in diatomic molecules have been worked out on the basis of data from Tables of interatomic distances and configurations in molecules and ions, Sci. ed. Sutton, Spec. Publ., no. 11, London, 1958: $r^{(KL)}_{i'j} = Ar^{(K\bar{L})}_{i''j} + B$, $j = 1, 2, \ldots$; $r^{(KL)}_{ij'} = Cr^{(\bar{K}L)}_{ij''} + D$, $i = 1, 2, \ldots$; $r^{(KL)}_{ij} = A'r^{(ML)}_{nj} + B'$; $r^{(KK)}_{ii} = A''r^{(LL)}_{jj} + B''$, where r is the internuclear distance measured in Å; K, L, M is the group of the periodic system; i, j, n is the line in the periodic system; A, B, C, D are constants. These equations were used for calculating approximately the internuclear distances in 112 diatomic molecules not yet investigated experimentally (Table). There are 5 figures and 5 tables.

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... 2.33 | SiTe | ... 2,29 | AsPo 2,61 | SbPo 2,90 |

SPIRIDONOV, V. P.

"Some applications of statistical methods to the interpretation of electron-diffracton data."

report submitted for 6th Gen Assembly, Intl Union of Crystallography, Rome, 9 Sept 63.

Chemical Dept, Moscow State Univ.

SPIRIDONOV, V.P.

Evaluation of the significance of the asymmetry of the peak on the curve of the radial distribution during electron diffraction studies of molecule with the aid of a static criterion. Vest.Mosk.un. Ser.2:Khim. 18 no.6:19-21 N-D '63. (MIRA 17:4)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

SPIRIDONOV, V.P.; TATEVSKIY, V.M.

Electronegativity concept of atoms. Part 1. Zhur. fiz. khim. 37 no.5:994-1000 My '63. (MIRA 17:1)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

L 12698-63 EWT(1)/BDS AFFTC/ASD P1-4

ACCESSION NR: AP3002925 S/0076/63/037/006/1236/1242

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AUTHOR: Spiridonov, V. P.; Tatevskiy, V. M.

TITLE: The atomic electronegativity concept. 2. Analysis of Pauling's electronegativity scale

SOURCE: Zhurnal fizicheskoy khimii, v. 37, no. 6, 1963, 1236-1242

TOPIC TAGS: Pauling's electronegativity scale, atomic electronegativity

ABSTRACT: It has been shown that there is no relation between the philological definition of "electronegativity" and the quantities x sub A and x sub B in Pauling's equation. Pauling's equation cannot serve as the definition of a new physical concept, except to indicate the fraction of the square root of the heat effect of a reaction contributed by a given atom in a molecule. It has been shown that Mulliken's attempt to provide a theoretical grounding for Pauling's equation is invalid, because the quantity introduced by Mulliken as "electronegativity" does not have the meaning of "the ability of atoms in a molecule to attract to themselves electrons", as required by Pauling's definition of this term. Orig. art. has: 3 equations and 1 table.

ASSOCIATION: Moscow St. University

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SPIRIDONOV, V.P.; TATEVSKIY, V.M.

Electronegativity concept of atoms. Part 3. Zhur.fiz.khim. 37 no.7:1583-1586 Jl '63. (MIRA 17:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.